REMARKS

Reconsideration of the above-identified application in view of the amendments above and the remarks following is respectfully requested.

Claims 1-49 are in this case. Claims 36-49 were withdrawn under a restriction requirement as drawn to a non-elected invention. Claims 1-35 have been rejected. Claims 3-5, 12-14, 21-23 and 30-32 have now been canceled. Claims 1, 6, 9-10, 15, 18, 19, 24, 27-28 and 33 have now been amended.

Drawings

The Examiner states that formal drawings have been submitted which fail to comply with 37 C.F.R. § 1.84.

A petition to accept color photographs is not filed herewith, since applicant believes that color figures are not necessary. Therefore, Applicant would like to replace the formal color drawings filed with the application with the respective black and white drawings attached herewith.

35 U.S.C. § 112, Second Paragraph, Rejections

The Examiner has rejected claims 1-35 under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which Applicant regards as the invention. The Examiners rejections are respectfully traversed. Claims 3-5, 12-14, 21-23 and 30-32 have now been canceled. Claims 1, 6, 9-10, 15, 18, 19, 24, 27-28 and 33 have now been amended.

With respect to claims 1, 3, 6, 9, 12, 15, 18, 21, 24, 27, 30 and 33 the Examiner points out that the metes and bounds of "a cell substantially lacking Ras activity" or in "said cell substantially only said second polynucleotide" are unclear.

In the interest of expediting prosecution in this case, Applicant has elected to cancel claims 3, 12, 21 and 30 and to delete the term "substantially" from claims 1, 6, 9, 15, 18, 24, 27 and 33 to thereby overcome the Examiner's rejection in this case.

With respect to claims 3, 12, 21 and 30 the Examiner points out that the metes and bounds of "further comprising (c) independently expressing in said cell (or cells)" are unclear since expression of the second polypeptide is also involved in

steps (a) and (b) and therefore it is unclear how the second polynucleotide can be "independently expressed".

Claims 3, 12, 21 and 30 have now been cancelled thereby rendering moot the Examiner's rejections with respect to these claims.

In view of the above amendments, Applicant believes to have overcome the 35 U.S.C. § 112, second paragraph, rejections.

Double Patenting

The Examiner has provisionally rejected claims 1 and 6 under the judicially created doctrine of obviousness type double patenting as being unpatentable over claims 1 and 3-4 of opening U.S. Pat. Application No. 09/765,298 (hereinafter 09/765,298). The Examiner's rejections are respectfully traversed. Claims 1 and 6 have now been amended.

The Examiner points out that claims 1 and 3-4 of 09/765,298 anticipate claims 1 and 6 of the instant application. Specifically, the Examiner asserts that the co-pending claims and the claims of the instant application recite a method of identifying interactions between polypeptides in which a polypeptide that interacts with the plasmalemma (or plasma membrane) and mutant Ras fused to a second polypeptide are expressed in a yeast cell. Phenotypic expression of Ras is indicative of an interaction between the two polypeptides.

Applicant wishes to point out that the method of the instant application, as now presented in amended claim 1, is patentably distinct from the method disclosed in 09/765,298.

Amended claim 1 now includes limitations of now cancelled claim 5 which have been deemed patentable over 09/765,298 by the Examiner. Specifically, these limitations relate to a feature of the method of the present invention which substantially reduces the likelihood of false positive results, more particularly, to a feature which enables to discount of Ras membrane translocation which does not result from an interaction between the tested polypeptides. Such a feature is neither described nor suggested by 09/765,298 and as s such, by employing this unique false positive eliminating step, the present method is vastly superior to the method described in 09/765,298.

For example, a cytoplasmic Ras mutant fused to a membrane protein can often result in membrane mobilization of Ras which is independent of interaction with the expressed "bait" polypeptide (see page 26 lines 7-11 of the instant application). Consequently, the need to reduce incidence of such false positive errors inevitably requires performing additional laborious, time consuming and costly controls and repeat assays.

In contrast to the referenced method, the present invention includes a step of determining a presence and an absence of expression of a first polypeptide (capable of interacting with the plasmalemma) in a cell. This step can be effected by separately expressing in a cell lacking Ras activity the first polynucleotide and the second polynucleotide, whereas the first polynucleotide is regulated under the transcriptional control of an inducible promoter. Preferably, determining the presence and absence the first polypeptide expression is effected by culturing the transformed cell under predetermined selective conditions (e.g., presence or absence of inducing or repressing agents in the culture medium; see in Example 1 and Figures 3-5 of the instant application). Thus, according to the teaching of the present invention, only an expression of the first polypeptide which coincides with Ras activity would be considered as a positive identification of an interaction between the tested polypeptides.

Hence, the method of the instant application, as now presented in amended claim 1, enables effective elimination of false positive results and thus presents a major technological advancement over the prior art method cited by the Examiner.

In view of the above described amendments and arguments presented it is Applicant's strong opinion that claims 1 and 6 are neither anticipated nor rendered obvious by U.S. Pat. Application No. 09/765,298.

35 U.S.C. § 102(a) Rejections

The Examiner has rejected claims 1, 6-8, 18-19 and 24-26 under 35 U.S.C. § 102(a) as being anticipated by Takemaru and Moon, The Journal of Cell Biology 149(2), April 17, 2000. The Examiner's rejections are respectfully traversed. Claims 1, 7, 18 and 24 have now been amended.

The Examiner points out that Takemaru and Moon teach expression of pRas(61)ΔF-ßcatR8-C which is comprised of the activated c-HaRas mutant and ß-catenin in the cdc-2 yeast strain. Library cDNAs are fused to the plasma membrane (plasmalemma) to identify polypeptides that interact with pRas(61)ΔF-ßcatR8-C as characterized by Ras activity.

Claims 1 and 18 have now been amended to include limitations of now cancelled (and non-rejected) claims 5 and 23, respectively. Claims 6, 19 and 24 have also been amended.

As is argued above with respect to the double patenting rejection, identifying interactions between polypeptides using the method according to the currently amended claims is distinct and substantially advantageous over prior art methods which do not employ the unique falls positive eliminating step of the present invention.

In view of the above described amendments and arguments presented it is Applicant's strong opinion that claims 1, 6-8, 18-19 and 24-26 are neither anticipated nor rendered obvious by the teachings of Takemaru and Moon.

35 U.S.C. § 102(e) Rejections

The Examiner has rejected claims 1, 3, 5-8, 18-19 and 23-26 under 35 U.S.C. § 102(e) as being anticipated by Abo and Aronheim, US Pat. No. 6,500,653. The Examiner's rejections are respectfully traversed.

Applicant wishes to point out that the applied reference has a common inventor with the instant application and that the invention disclosed but not claimed in the reference was derived by the inventor of this instant application (Aronheim) under 37 CFR 1.132. A respective Declaration is attached herewith.

In view of the above amendments and remarks it is respectfully submitted that claims 1-2, 6-11, 15-20, 24-29 and 33-35 are now in condition for allowance. Prompt notice of allowance is respectfully and earnestly solicited.

Respectfully submitted,

Sol Sheinbein
Registration No. 25,457

Date: June 1, 2004.

Encl.:

1. A set of black and white drawings.
2. A Declaration under 37 CFR 1.132.
3. One month extension fee.

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of:		§	
		§	
	Ami ARONHEIM et al	§	
		§	
Serial No.:	09/777,856	§	
		§	
Filed:	February 7, 2001	§	Group Art Unit: 1636
		§	
For:	Nucleic Acid Construct System and Method Utilizing Same Useful for Identifying Protein-Protein Interactions	§	
		§	
		§	Attorney Docket: 01/21605
Examiner:	Maria Marvich	§	

Commissioner for Patents
PO Box 1450
Alexandria, VA 22313-1450

DECLARATION UNDER 37 CFR 1.132

Sir:

I, Ami ARONHEIM, am the co-inventor with Monika HUBSMAN on the above-identified instant application.

I am also the co-inventor of U.S. Patent 6,500,653, along with Arie ABO cited by the Examiner in an Office Action dated February 5, 2004 to reject Claims 1, 3, 5 – 8, 18 – 19 and 23 – 26 of the instant application.

I have reviewed Patent 6,500,653 and state unequivocally that I conceived and invented the subject matter disclosed, but not claimed, in Patent 6,500,653.

I hereby further declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or of any patent issuing thereon.

Signed this 31 day of May 2004.

Ami Aronheim

Ami ARONHEIM